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Technical Notes
Sound Switch (Mark 2)

The switch on the top of your Sound Switch is the reset switch.
Connect the DIN plug to either DIN socket on TSA/ALBA.

TSA or ALBA Interface

Adjusting the Sensitivity

Note that your Sound Switches have been set for maximum sensitivity at the factory and they are unlikely to need any adjustment.

In the event that adjustment is required the following steps will be necessary.

- Remove the top panel by undoing the two screws in the base.
- Position the box so that the microphone is on the left hand side.
- Towards the bottom right of the board you will see a potentiometer. The silvered top has a slit in it. You can adjust it by inserting a jeweller's screwdriver of suitable size into the slit. Turn it fully anti-clockwise - it should be roughly in the 10 o'clock to 4 o'clock position. Now turn it clockwise to the 12 to 6 o'clock position. This is the factory setting.
- Connect the unit's DIN plug to a TSA or ALBA and switch on the power. Press the red button on the Sound Switch. The red LED should come on and stay on until you make a noise to trigger it. If the LED comes on and immediately goes off then the sensitivity needs to be decreased. Do this by nudging the potentiometer clockwise by 10 degrees.
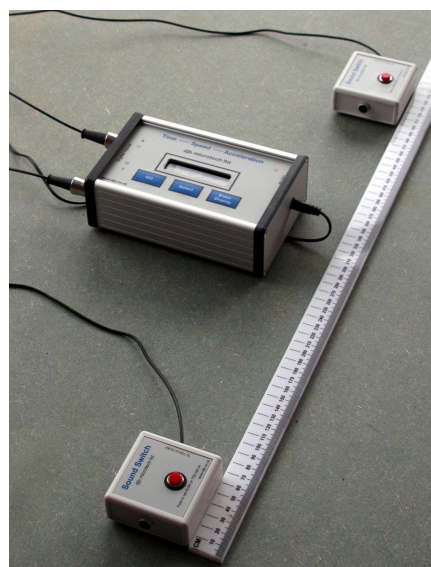
Measuring the Speed of Sound in Air using TSA

- Connect the two sound switches to TSA/ALBA.
- Place the sound switches one metre apart.
- Select the **Fast Timer** mode on TSA or use the ALBA Application 'Speed of Sound'.
- When using the Fast Timer all inputs should be debounced. Since latched switches are being used here no bounce is possible - Press <D>.
- The number of Fast Timer events to be measured is 2 - press <E>nter
- Reset both Sound Switches - the LEDs on TSA/ALBA come on.
- Press GO if using TSA. ALBA users should follow the instructions in the Notes section of the software.
- TSA displays 'Waiting'.
- Using an empty bottle and a plastic handled screw driver make a sharp tap in front of the leading sound switch.
- The time to travel one metre is displayed on TSA.
- Repeat several times and take an average.

Alternatively you can set the debounce delay on TSA to zero then select the Speed mode. Note that TSA may take several seconds to calculate and display the result using this method.

A sharp edged fast rising sound pulse is essential for consistent results.

The speed of sound is approximately 343 m/s at 20 °C

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